

We claim:

1. A flexible shoe assembly for use in a molding system comprising,

a body for supporting a load; and

5 a force redirector;

said body having a upper surface for slideably engaging a complimentary surface of a supported member, and said force redirector disposed in said body in a plane below said upper surface for redirecting said force from a peripheral edge of
10 said upper surface to a central force area in said body.

2. A shoe as in claim 1 further comprising,

a load distributor disposed in a plane above said force redirector, said load distributor distributing a load across
15 said upper surface and maintaining said upper surface relatively flat under loading.

3. A shoe as in claim 2 wherein,

said load distributor is formed on said upper surface.

20 4. A shoe as in claim 2 further comprising,

a wear pad; and

a wear pad retainer formed in said upper surface;

said wear pad mounted by said wear pad retainer on said upper
25 surface wherein said load distributor is formed on a lower surface of said wear pad.

5. A shoe as in claim 3 ~~or 4~~ wherein,

said load distributor is a series of stepped notches.

30 6. A shoe as in claim 3 ~~or 4~~ wherein,

said load distributor is a contoured recess.

7. A shoe as in claim 1, ~~comprising~~ wherein,
said force redirector provides pivotal movement of said upper
surface.

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8. A shoe as in claim 7 wherein,
said force distributor is a pair of slots in said body forming a
web interconnecting an upper support member and a lower support
member.

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9. A shoe as in claim 7 wherein, said force redistributor is a
slot forming a web interconnecting an upper support member and a
lower support member.

15 10. A shoe as in claim 8 further comprising a first flexation
stop disposed in one of said pair of slots between said upper
support member and said lower support member; and
a second flexation stop disposed in a second of said pair of
slots between said upper support member and said lower support
20 member, said first flexation stop and said second flexation stop
limiting pivotal movement of said upper support.

11. A shoe as in claim 9 further comprising a flexation stop
disposed in said slot between said upper support member and said
25 lower support member, said flexation stop limiting pivotal
movement of said upper support.

12. A shoe as in claim 4 wherein,
said wear pad retainer is a first edge lip formed at a first
30 peripheral edge of said upper surface of said body and a second
edge lip formed at a second peripheral edge of said upper
surface of said body said first edge lip and said second edge

lip engaging respective ends of said wear pad releasably retaining said wear pad with said shoe.

13. A molding system comprising,

- 5 a stationary platen for mounting a first mold half;
a moving platen for mounting a second mold half;
at least one tie bar member interconnecting said moving platen
and said stationary platen;
said moving platen having at least one opening for receiving at
10 least one tie bar member;
a flexible shoe assembly mounted in said moving platen
supporting said tie bar member;
said flexible shoe assembly having a body for supporting a load;
said flexible shoe assembly having a force redirector; and
15 said flexible shoe assembly having an upper surface for
slideably engaging a complimentary surface of said tie bar
member, said force redirector disposed in said body in a plane
below said upper surface for redirecting said force from a
peripheral edge of said upper surface to a central force area in
20 said body.

14. A molding system as in claim 13 further comprising,
a load distributor disposed in a plane above said force
redirector, said load distributor distributing a load across
25 said upper surface and maintaining said upper surface relatively
flat under loading.

15. A molding system as in claim 14 wherein,
said load distributor is formed on said upper surface.

16. A molding system as in claim 14 further comprising,
a wear pad; and

a wear pad retainer formed in said upper surface;
said wear pad mounted by said wear pad retainer on said upper
surface wherein said load distributor is formed on a lower
surface of said wear pad.

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17. A molding system as in claim 15 ~~or 16~~ wherein,
said load distributor is a series of stepped notches.

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18. A molding system as in claim 15 ~~or 16~~ wherein,
said load distributor is a contoured recess.

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19. A molding system as in claim 13, ~~14, 15, 16, 17, or 18~~
wherein,
said force redirector provides pivotal movement of said upper
surface.

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20. A moldings system as in claim 19 wherein,
said force redistributor is a pair of slots in said body forming
web interconnecting an upper support member and a lower support
member.

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21. A molding system as in claim 19 wherein, said force
redistributor is a slot forming a web interconnecting an upper
support member and a lower support member.

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22. A molding system as in claim 20 further comprising a first
flexation stop disposed in one of said pair of slots between
said upper support member and said lower support member; and
a second flexation stop disposed in a second of said pair of
slots between said upper support member and said lower support
member, said first flexation stop and said second flexation stop
limiting pivotal movement of said upper support.

23. A molding system as in claim 21 further comprising a flexation stop disposed in said slot between said upper support member and said lower support member, said flexation stop
5 limiting pivotal movement of said upper support.

24. A molding system as in claim 16 wherein,
said wear pad retainer is a first edge lip formed at a first peripheral edge of said upper surface of said body and a second
10 edge lip formed at a second peripheral edge of said upper surface of said body said first edge lip and said second edge lip engaging respective ends of said wear pad releasably retaining said wear pad with said shoe.

15 25. A molding system as in claim 13, ~~14, 15, 16, 20, 21, 22, 23,~~
~~and~~ further comprising:
an injection unit;
said injection unit communicating with said first mold half for
injecting a molten material into said mold.

20 26. A molding system as in claim 25 further comprising:
a first mold half; and
a second mold half; said first mold half mounted on said stationary platen, said second mold half mounted on said moving
25 platen, said first mold half and said second mold half forming a mold including a core and cavity to define a part.